

HAP

Henry H. Arnold Military Aviator

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A formal portrait of 13-year-old Henry Harley Arnold, probably taken in 1899.

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HAP **HENRY H. ARNOLD, MILITARY AVIATOR**

Born in Pennsylvania on June 25, 1886, Henry Harley Arnold spent his youth in a home a few miles west of Philadelphia. His father, an authoritarian, conservative, and austere physician, so dominated the household that his children were not allowed to speak at the dinner table. Young Arnold reacted to this rigid upbringing in two ways. First, although he learned to submit to authority when necessary, he also developed a streak of contrariness that, on occasion, led him to oppose the powers that be when he disagreed with them on important issues. Second, when Arnold achieved positions of high command and stress, he reverted to type and adopted his father's authoritarian ways, which blended well with the management philosophy of the U.S. Army in the first half of the twentieth century. Arnold did not lead by attempting to create consensus.

While genetic circumstance gives some individuals a stern, unsmiling physiognomy, it played the opposite trick on Arnold, affixing an almost permanent smile on his face. By the 1920s that smile would earn him the nickname of "Happy," soon shortened to "Hap."¹ On first meetings his apparent insouciance could lead others to misjudge both his ability and his tenacity. However, during World War II, members of the U.S. Army Air Forces Air Staff soon learned that the general's countenance retained its smile, even as he verbally cut subordinates to ribbons. At West Point and later Arnold displayed a mischievous, impertinent bent in accord with his looks. But Arnold had a ruthless impatience with failure, slackness, and incompetence coupled with a furious, sometimes uncontrolled, temper. Above all, he relentlessly drove himself and those around him to succeed at their tasks. His staff and subordinates felt his fire. As he matured he saved most of his charm for his superiors.



Colonel Henry Harley Arnold, circa 1917.

Arnold graduated from the U.S. Military Academy, West Point, in 1907. However, his mediocre class standing—sixtieth out of 110 in academics—denied him appointment to the army's prestigious cavalry branch,² which he apparently longed for, and earned him instead assignment to the infantry. At the academy he stayed a "cleansleeve," that is, he failed to earn any formal cadet rank. But he apparently led an irregular band of cadet pranksters and practical jokers known as the "Black Hand," early evidence of an irreverence for the establishment that remained part of his character for much of his career. Upon leaving West Point, Second Lieutenant Arnold found himself assigned to the Philippine Islands. He debarked in Manila on December 7, 1907.³



Engineer soldiers and Arnold, then a bearded young lieutenant, on an engineering survey mission in the Philippines.

Arnold spent his tour in the Philippines mapping the islands of Luzon and Corregidor. In early 1909 his erstwhile superior, Capt. Arthur S. Cowan, asked him to volunteer for the Signal Corps' newly established Aviation Section. Without ever having seen an aircraft, Arnold accepted, but the War Department took no action.⁴ Upon completion of his tour, Arnold returned from the Philippines via the western route, which allowed a stopover in Paris. There he saw his first airplane, the same craft, piloted by Louis Blériot, that in July 1909 had completed the first crossing of the English Channel. Blériot's aircraft did not immediately instill in young Arnold an overpowering desire to fly. But his next tour of duty, at Governor's Island, New York, increased Arnold's interest in flight. The island's flat terrain allowed it to host a number of aviation pioneers, including the Wright brothers and Glenn Curtiss during Arnold's stay. Never happy in the infantry, Arnold began to cast about for ways to leave it.

In April 1911, in hopes of a transfer, he took the difficult Ordnance Department exams and renewed his offer to fly for the army.⁵ The War Department, which at that point had not a single qualified pilot, responded promptly and asked Arnold if he wished to volunteer for pilot training with the Wright brothers in Dayton, Ohio. Arnold asked the advice of his colonel, who replied, "I know of no better way for a person to commit suicide."⁶ The challenge of flying and to authority—as well as a chance to spend a tour of duty outside of the detested infantry—proved irresistible. Ten weeks later, upon completing the Wrights' course, Arnold received pilot license number 29. He became one of two active pilots in the U.S. Army.

Arnold joined a select and dangerous fraternity. Of the first twenty-eight pilots, ten died in airplane accidents, twelve quit flying after a few months, four died of natural causes, and two stopped flying after two or more years. The awe and regard of the public for flyers in the first decade after the Wrights' original takeoff in December 1903 can barely be appreciated eighty years later. Not only was the public much less sophisticated, it was also much less blasé about technological progress. Pilots—who literally braved death with each short flight of their extremely primitive and flimsy machines—received the combined adulation the 1990s have reserved for astronauts, movie stars, pop singers, and professional athletes. Aviation magazines recorded almost every flight and innovation. As a consequence of this idolization, Arnold soon acquired contacts with newspaper and magazine reporters and an appreciation of popular taste and how to manipulate it in the media. At the same time Arnold and other army flyers began to chafe at the War Department's management of its nascent air arm. In his memoirs he derided the department's refusal to purchase a bombsight or to discontinue its attempts to employ a technologically infeasible machine gun on aircraft.⁷

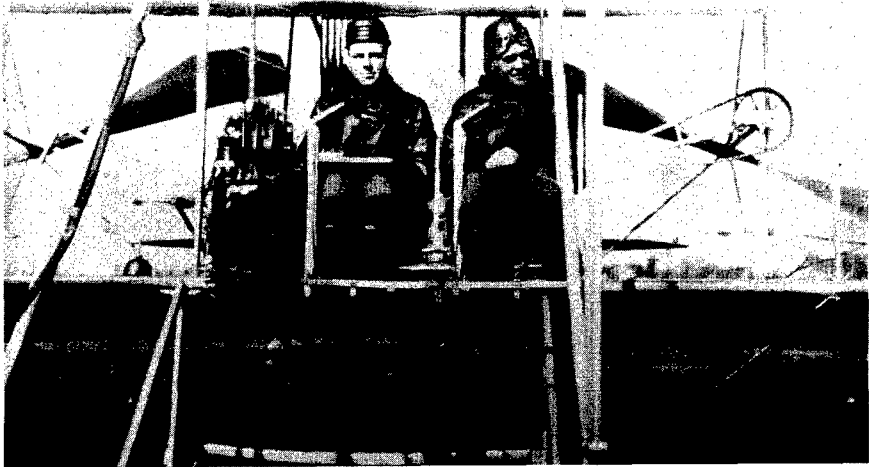
Arnold set several aviation firsts in 1911 and 1912. The day after his flight training graduation he set a new world's altitude record, 3,260 feet;

two weeks later he raised the record to 4,167 feet. On June 1, 1912, he raised the record again, to 6,540 feet. In August he became the first man to fly the U.S. mail, during maneuvers in New York. Two months later, on October 9, he earned the first Mackay Trophy for outstanding aeronautical achievement by navigating a triangular course from College Park, Maryland, to Washington Barracks, D.C., to Fort Myers, Virginia, and back to College Park while locating a detachment of cavalry. At the end of the month Arnold traveled to Fort Riley, Kansas, to conduct experiments in aerial spotting for artillery. He became the first military aviator to use a radio for correcting artillery fire. In the space of three weeks he had demonstrated the aircraft's potential for reconnaissance and observation.⁸



Arnold at the left-hand set of controls of a Wright-type pusher.

His next flight, on November 5, 1912, almost ended in disaster. Arnold's Wright Model C Flyer, a notoriously tricky craft to pilot, spun in an abrupt 360 degree circle, stalled at 400 feet, and nose-dived uncontrollably groundwards. Although the machine was completely undamaged, nothing the frantic Arnold attempted slowed the fall. He gave himself up for lost. By instinct or dumb luck—Arnold never knew which—he regained control at the last possible split-second, at approximately eighty feet, and landed safely.⁹ This close call, plus nervous exhaustion and the knowledge of the odds stacked against long-term survival for the first pilots—amply demonstrated by the loss of many friends—combined to give Arnold a case of fear of flying. The next day he wrote to his commanding officer, stating that "At the present time my nervous system is in such a condition that I will not get in any machine." In a further report he noted, "I cannot even look at a machine in the air without feeling that some accident is going to happen to it."¹⁰



Lts. Follett Bradley (left) and Henry H. Arnold (right) preparing to conduct experiments in artillery spotting and tests of communications with artillery batteries on November 2, 1912, at Fort Riley, Kansas. Their Wright Type C, S.C. No. 10, was the same airplane Arnold almost perished in three days later.

The Signal Corps transferred him to desk duty in Washington D.C., where he stayed until September 1913. In April 1913 he became a first lieutenant. In Washington, as an aide to the chief signal officer, he became enmeshed in the War Department bureaucracy. Arnold found that he disliked routine administration, but nonetheless learned much about how the paperwork machine functioned and how to work around it. During this period he renewed his acquaintance with Capt. William "Billy" Mitchell

and gave his first testimony to Congress. On August 16, 1913, he told a House Military Affairs Committee hearing on army aeronautics that the army's aviation function ought to stay under the protection of the Signal Corps rather than establish itself as an independent combat branch of the army.¹¹

Arnold returned to Manila in mid-January 1914. He and his bride set up permanent housekeeping in officers' quarters at Ft. McKinley. A senior first lieutenant, George C. Marshall, and his wife occupied the adjacent quarters. The two future five-star generals had ample opportunity to take each other's measure during subsequent maneuvers and duty together. Arnold predicted to his wife that someday Marshall would become chief of staff.¹² For his part, Marshall apparently jotted a favorable notation next to Arnold's name in his "little notebook." Twenty-five years later those notes would make or break many an officer's hope for advancement to general officer. At the end of the two-year tour the Arnolds returned to the U.S.

At a stopover in Hawaii Lt. Arnold received a telegram from Maj. Billy Mitchell, now the executive officer of the Aviation Section. Mitchell asked Arnold if he would volunteer to return to aviation, or at least not object to such a transfer. Upon Arnold's query, Mitchell explained that if Arnold volunteered, he would come back as a captain; if he transferred, he would come back as a first lieutenant; but come back he would—the Aviation Section needed his experience. Captain Arnold reported to Rockwell Field, North Island, San Diego, California, at the end of May 1916 and served as supply officer for the Signal Corps' Aviation School until February 1917. The school flew Curtiss model JNs, a far more advanced and safer airplane than those flown a few years earlier. Arnold had, of course, never completely expunged the "air virus" from his system. It lay dormant under his phobia. After almost four years of refusing to ride on an aircraft even as a passenger, and after four months of listening to the roar of the aircraft and the talk of excited pilots, Arnold decided to test himself. On October 18, 1916, he flew as a passenger; a month later he soloed; and in mid-December he flew for over forty minutes while flying upside down and putting the aircraft through stalls, spins, rolls, and loops.¹³ He had reclaimed his self-respect.

In February 1917 Arnold left San Diego to establish the newly created Seventh Aero Squadron in the Panama Canal Zone. Conflicting interservice and intraservice rivalries prevented him from even selecting a site for an airfield. His commander recommended that he return to Washington to get a decision. His boat arrived in New York on April 6, 1917, the day after the U.S. declared war on Germany. He sped to Washington in hopes of obtaining a combat command. Instead of getting him a place at the front, his comparatively vast flying experience earned him a desk in Washington. The Aviation Section desperately required officers knowledgeable in flight training and air logistics. Including Arnold, the army

had only thirty-nine fully qualified pilots, not all of whom had administrative, training, or leadership abilities; 1,800 enlisted men, including cooks as well as mechanics; and no combat capable aircraft.¹⁴ If he had wanted to fight, Arnold would have been better served to stay with the foot soldiers.

He served in a temporary capacity until the beginning of June 1917, and helped to prepare the first wartime estimates of the army's military air strength. Congress had approved the first supplemental appropriation, for \$10,800,000, on May 12. The second estimate, \$43,450,000, passed through Congress on June 15. It provided for sixteen observation squadrons, a like number of balloon companies, and no combat aircraft. Also in early June Arnold became officer in charge of the information service of the Aviation Section. This post handled routine information requests from Congress, wrote speeches for senior officers, and served as the Aviation Section's press agent in charge of relations with the print media. The appointment of an officer of Arnold's experience to this assignment at this time demonstrated the importance attached to it and was an official judgment of Arnold's suitability for it. However, he spent little time performing this task.

At the end of May 1917 French premier Alexander Ribot sent a telegram to President Woodrow Wilson at the urgings of Maj. Billy Mitchell, who was then serving as an observer in France. Ribot gave his government's estimate for American air requirements on the western front for 1918 and suggested that the U.S. send 4,500 aircraft, 5,000 pilots, and 50,000 mechanics accompanied by appropriate support personnel and matériel. The Americans, he recommended, should also arrange to produce 2,000 aircraft and 4,000 engines per month.¹⁵ Such was the grip of war fever in Washington that the president, the secretaries of war and of the navy, and the joint army-navy technical board approved the program within three days of the telegram's receipt and charged the Aviation Section to prepare an appropriation for a program that exceeded its wildest expectations. Aviation Section headquarters, including Arnold, worked around-the-clock for three weeks, producing a draft calling for procurement of 22,600 aircraft—including trainers and support aircraft—together with necessary logistics and manpower support. It specified an expenditure of \$639 million, an enormous sum for that period.¹⁶ When the Army General Staff failed to move quickly, Secretary of War Newton Baker had friendly congressmen introduce the program on July 4, and it winged through both houses. President Wilson signed the appropriation legislation on July 24, 1917.

The bill's passage effectively nailed Arnold to his desk job in the U.S. From August 1917 through May 1918 he served as the executive to the commander of the Aviation Section and in the same position for the commander of the Signal Corps, Air Division. Promotion accompanied increased responsibility. Arnold had become a major in June 1917 and

two months later, on August 5, at the age of thirty-one, he became the youngest colonel in the army. On May 20, 1918, President Wilson reorganized the army's aviation function, removing it from the Signal Corps and establishing a bureau of aircraft production—charged with providing aircraft, engines, and equipment to the air arm—and a directorate of military aeronautics—given the task of procuring and training the flying forces and ground echelons for duty in France.¹⁷ Arnold eventually became the deputy director of the latter.



Arnold, youngest colonel in the army, circa 1917.



Brig. Gen. William L. Kenly, director of military aeronautics, flanked by Arnold on his right and Col. F. R. Kenney on his left, 1918.

Authority and status brought Arnold only a modicum of satisfaction. His superiors continued to turn down his repeated requests for reassignment to combat in France. He was convinced that lack of combat experience would hinder any postwar career in the service. More important, Arnold found the task he had undertaken of helping to create a modern air force from the ground up one of almost Sisyphean frustration.

For the most part, the jobs of procuring, training, equipping, organizing, and fielding a force of a planned 345 squadrons simply overwhelmed the Aviation Section. Change disorients individuals and organizations. Military organizations, even more than most bureaucracies, resist reform, in part because the officer corps often consists of cohesive, conservative, like-minded individuals, and, in part, simply because the military recognizes the basic fact that until change is fully assimilated, it causes inefficiency. It takes an army time to adjust to the introduction of new weapons systems, new tactical methods, or even new nomenclature. That adjustment must spread in some manner from procurement and intake of personnel to the battlefield or the reverse; a breakdown in adjustment at any phase may result in catastrophic consequences. A military service must balance two conflicting and equal priorities: improvement versus readiness. If reform comes too slowly in peace—a seemingly endemic failure in western professional armed forces—then the service is prepared to fight, but with obsolescent tactics and equipment, and it will be forced to convert while engaged in hostilities, the most difficult and costly time to introduce change. At the opposite extreme, if a service constantly introduces new techniques and equipment in peacetime, the ensuing turmoil leaves it unable to perform effectively in battle—a common flaw of third world militaries, whose leadership must always have the latest technological gadgets. In World War I U.S. Army aviation combined the worst flaws of both extremes.

Aviation's position as subordinate to both the Signal Corps and the War Department saddled it with an unsuitable, unworkable, and unsympathetic organizational structure. For example, aviation procurement had no responsibility to coordinate with aviation training and operations. This resulted in the men flying the aircraft having little or no input into the design of the machines until they received them for testing. Of course, the War Department had undergone significant reform in the aftermath of its poor performance in the Spanish-American War. However, the reforms—such as the creation of a general staff and a system of professional military education—enacted by Secretary of War Elihu Root and others had not necessarily been based on the best foreign models, nor had they been fully assimilated or tested in the furnace of war. The fact that they were reforms did not automatically make the army's new institutions pro-air. Infantry officers, with no understanding or feeling for aviation, dominated the War Department General Staff from its inception and throughout its entire existence.

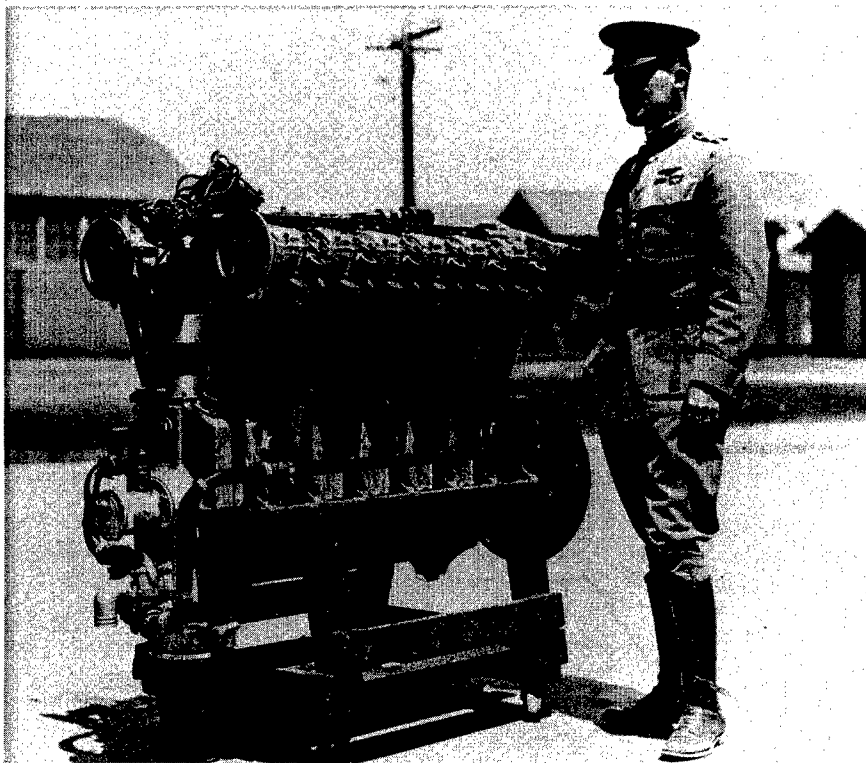
While organizational flaws and bureaucratic shortfalls hamstrung military aviation, reducing its progress to a painful crawl at the best of times, an almost never-ending blizzard of technological and managerial complexities threatened to prevent almost any forward movement at all. The automobile industry had intended to turn out aircraft by the thousand, only to learn that World War I era aircraft did not lend themselves to the assembly line. (The military services were not the only organizations adversely affected by change.) However, the auto industry did excel in one field of aviation production—aeronautical engines, the one piece of the aircraft most similar to its automobile counterpart. The demand for spruce, the most suitable wood for aircraft construction, immediately encountered the iron laws of supply and demand, forcing creation of a federal spruce board to manage the resource. The British borrowed thousands of mechanics and refused to return them. All the Allies had different suggestions on training and aircraft. Engines and aircraft required constant redesign, often while under production, and the recruitment of specialized personnel met many obstacles. Then Congress began to investigate for corruption and lack of progress. One major obstacle could have been overcome, and in time—which the Allies did not have if they were to meet the Germans' spring 1918 offensives—perhaps a dozen major problems might have been solved. But the plethora of difficulties, compounded by the stresses of war, produced a situation of almost total chaos. Only by the grace of sheer will power and brute labor, plus the generous aid of the French and British, did those involved with American military aviation succeed in sending air combat and support units to Europe, where they required further training.

In retrospect, the fact that U.S. Army aviation supplied a reasonable force to assist the final American offensives on the western front in the fall of 1918 should be accounted a miracle. The vast bulk of the combat aircraft were foreign made, but the units and men were American. Their deeds attested to the efforts of Arnold and many others to extract results from bedlam.

Arnold never made it into combat in either world war, a circumstance that does not appear to have affected his career but did leave him with a nagging sense of failure. Lack of combat experience may also have subsequently led him to underestimate the difficulties of his overseas subordinates in World War II. On the other hand, Arnold's hands-on role in readying all aspects of an air service for overseas deployment in World War I would give him a tremendous advantage before and during World War II. Arnold cited notes he had made in 1918 thirty years later in his memoirs:

We tried to learn how to secure quantity production of airplanes the hard way. We never accepted the fundamental principle that an airplane building program must be supervised by men who know how

to design and construct airplanes.... Certainly World War I definitely proved that trained aviation personnel can be turned out much faster than we can turn out airplanes. The truth is, the foundation for any workable production plan for aircraft must be built up in time of peace.¹⁸



Maj. Arnold at the San Diego Air Depot in 1919, examining the first Liberty engine built by the Ford Company in World War I.

Soon after the armistice the U.S. began its traditional breakneck demobilization, reducing Arnold to a major, in the middle of the army's officer's seniority list, and the Air Service to a hand-to-mouth existence limited to war-surplus airframes and engines. The energetic Brig. Gen. Mitchell stayed in Washington as the Air Service's deputy commanding general, where he championed the cause of air power. Others, such as Arnold, attempted to advance the cause of military air power in the field. In the early 1920s Arnold, while serving as commander of Rockwell Field, California, helped to organize an air patrol along the Mexican border and an aerial forest fire watch, both of which advanced the popularity of the Air Service and demonstrated the utility of flight. Also at this time

pilots under his command initiated air-to-air refueling experiments. In 1921 Maj. Arnold had his friend, Maj. Carl A. Spaatz, and an Alsatian chef fly from San Francisco to Petaluma and return with a live hen. While in the air the chef, in theory, would cook the hen's egg and serve the mayor of San Francisco "the freshest egg in the world." The hen bailed out soon after take-off, but the chef had a reserve egg, which the mayor wolfed down. The press loved it.¹⁹

In August 1924 Maj. Arnold returned to Washington, D.C., to attend the Army Industrial College. His course of study dealt with industrial mobilization for war. While attending the college, Arnold learned much that would help him in later years and managed to have some of his own wartime experience incorporated into the curricula. He convinced the college that aircraft manufacturers—who had experience, but tiny facilities—not automobile manufacturers—who had giant assembly lines, but no experience—should supervise or serve as prime contractors for wartime and aircraft production.²⁰ From this small beginning grew the army's policy of encouraging and to some extent subsidizing the growth of the manufacturing capability of U.S. aircraft makers.

On February 3, 1925, Arnold became chief of the information division of the office of the chief of the Air Service in Washington, D.C. As the Air Service's chief publicity officer, Arnold used his relations with sympathetic congressmen and the press to spread the views and needs of the Air Service. This post, and his later testimony as a defense witness, put Arnold in the thick of one of the army's most celebrated courts-martial, that of Col. William Mitchell. It also put him in the middle of the struggle to define the place of the Army Air Service within the U.S. military. The judicial proceedings against Mitchell attracted the most public attention. After alienating the U.S. Navy, the secretary of war, the command ranks of the U.S. Army, the head of the Air Service, and certain powerful members of Congress with his increasingly strident calls for strengthening U.S. aviation policy, Mitchell lost his position as Air Service deputy commander and was exiled to Ft. Sam Houston, Texas, as air officer for the VIII Corps. His subsequent heated comments on the crash of a navy airship came to the attention of President Calvin Coolidge, who ordered Mitchell's court-martial for conduct prejudicial to military discipline. This, much to the army's dismay, gave Mitchell the chance to play center stage in October and November 1925, in a circus trial revolving around the role and uses of military air power. Arnold and Spaatz, who gave particularly dramatic testimony, stayed up until all hours of the night to assist Mitchell in preparing his testimony. But Mitchell, the central figure, flubbed his part. Instead of histrionics that might have cemented the sympathies of the press to his cause, Mitchell delivered long, boring, droning lectures, reading verbatim from the hundreds of pounds of records he had submitted as evidence. His excessively intellectual approach made poor copy for the press. It also failed to do him any good

with the crowd and alienated the general officers who comprised the court. One lectures a general at one's own risk. The court convicted Mitchell as charged and sentenced him to five years' removal from active duty. He resigned instead.

In the meantime a congressional select committee, known as the Lampert Committee, and the president's aircraft board, known as the Morrow Board, appointed by President Coolidge at the behest of the secretaries of war and the navy, held hearings on the role of the Air Service. Arnold and Mitchell both testified. Arnold supported the head of the Air Service, Gen. Mason Patrick, who wished to give the Air Service a position within the army similar to that of the marines within the U.S. Navy, while Mitchell called for a national Department of Defense, with subordinate departments for air, land, and sea forces. The Lampert Committee supported Mitchell, but the Morrow Board, whose recommendations prevailed, as reflected in the Air Corps Act of 1926, provided for a change in name from Air Service to Air Corps, minor administrative reforms, the placement of air sections within general staff sections, and a limited five-year expansion program.²¹

Major Arnold continued to support Gen. Patrick's proposed air power bill. In doing so he and another officer overstepped the line between official spokesman and lobbyist. In February 1926 they used War Department resources to send an anonymous circular to every officer in the Air Service and Air Service Reserve urging them to ask their senators and representatives and influential friends to support the bill.²² The circular enraged the secretary of war, and the army inspector general began to investigate the matter. These moves placed Patrick, who disliked Arnold, in an extremely awkward position, especially since he had officially and unofficially encouraged Arnold to use his position to its limits. Patrick offered Arnold the choice of resignation or court-martial. Arnold chose the latter, and Patrick, wishing to avoid another messy trial hard upon the Mitchell affair, backed down. On March 9, 1926, he gave Arnold thirty-two hours to report to Marshall Field, Ft. Riley, Kansas, which hosted a tiny, outdated air unit, to act as the air officer supporting the cavalry school. Given Arnold's previous flying experience at Ft. Riley, Patrick could have chosen no worse spot to send him.

For the next two-and-one-half years Arnold threw himself into his new duties. Instead of withering, he thrived. He set up air demonstrations with the cavalry, hosted numerous high-ranking visitors, and provided support for one of President Coolidge's summer vacations. He even found time to inaugurate his literary career. Arnold picked up one of the books his sons were reading, a "boy's book" typical of the entertainment of that era, and commented that he could write a more interesting story, and one that was all true. He proceeded to do so and found a publisher, A. L. Burt, willing to accept the *Bill Bruce Series*. In short order he wrote six books on the exploits of Bill Bruce, intrepid aviator. He based his stories on

actual aerial events from his own career and those of his compatriots in the Air Corps. Arnold said of the books,

The idea which I carried out in the boys [sic] books was to give facts, interspersed by thrills and sensations, which would give the reader a comprehensive idea of the development of aviation. The thrills and sensations filled the boy's desire in that direction while he absorbed the facts.²³

He might have continued the series save for a dispute with his publisher, who refused his demand for \$300 per volume and would pay only \$250 each. Arnold was never one to sell his services short. Arnold also finished the draft of a serious work, *Air, Man, and Aircraft*, which he had published in 1929.

In late 1927 Gen. Patrick retired. His replacement, Maj. Gen. James E. Fechet, and the new assistant secretary of war for air, Trubee Davison, both respected Arnold. Fechet secured a place for Arnold at the Army Command and General Staff School, Ft. Leavenworth, Kansas, over the objections of Brig. Gen. Edward L. King, the school commandant and, formerly, a judge in the Mitchell court-martial. This was a prestigious assignment for army officers, because it trained and qualified graduates for higher command. It further indicated that an officer's superiors, who approved his application for the school, publicly recognized him as an officer of above average capability. The course of instruction virtually ignored air power, but Arnold passed the year-long school in June 1929, and earned the grudging respect of its commandant.



Lt. Col. Arnold at Dayton maneuvers, 1931, together with, left to right, Howard S. Smith of the Dayton Chamber of Commerce, Orville Wright, Maj. Carl Spaatz, Brig. Gen. Benjamin Foulois, Maj. A. L. Sneed, and Brig. Gen. H. C. Pratt.

For the next nine years Arnold held a series of increasingly important posts. From June 1929 through January 1931, under Brig. Gen. Benjamin D. Foulois, he served as the commander of the Fairfield, Ohio, air depot (now known as Wright-Patterson AFB) and chief of the field service section, matériel division. This assignment strengthened his already broad knowledge of the technical, maintenance, and procurement functions of the service. On February 1, 1931, the War Department promoted him to lieutenant colonel in the regular army, after eleven years as a major. Shortly thereafter, a friend of twenty years, Gen. Douglas MacArthur, became army chief of staff. Arnold had survived his exile. In November 1931, he assumed command of March Field, Riverside, California. He had the task of converting it from a training facility to an operational base.

While undertaking that duty, Lt. Col. Arnold, with his bent for seeking positive publicity for the Air Corps, took advantage of March Field's proximity—less than 100 miles—to Hollywood, the movie capital of the world. He had met Will Rogers at Ft. Riley in 1926, and had pinned wings on Mary Pickford in 1918. He soon became great friends with movie mogul Jack Warner. Screen luminaries, such as Wallace Beery and Jean Harlow, attended the opening of the base theater. The Air Corps gospel, Arnold version, found several converts. Arnold also renewed acquaintances with moguls of another new California industry, aviation, such as Donald Douglas, and lent his help to scientific experiments conducted by Caltech.²⁴ In short, Arnold demonstrated a depth of vision that supported the advancement of almost every aspect of aviation.

Professionally, Arnold dealt with natural and man-made disasters. In the winter of 1932–1933 his unit dropped food to Indian settlements isolated by blizzards. In 1933 he helped organize relief for victims of the Long Beach earthquake and became the officer-in-charge of the California branch of the Civilian Conservation Corps.²⁵ During large-scale Air Corps maneuvers he served as G-4, or supply officer, which added to his knowledge of mass aviation logistics. He also struck up a friendship with Maj. Gen. Malin Craig, commander of the army's IXth Corps Area, and cemented friendships with Capt. Ira C. Eaker, Maj. Carl A. Spaatz, Maj. Joseph T. McNarney, and others whom he would rely upon in World War II. In March 1934, when the Air Corps carried the U.S. mail for three months during contract negotiations between the civilian airlines and the Roosevelt administration, Arnold handled the western mail routes, which included the Rocky Mountains and had the least developed infrastructure. The Air Corps proved incapable of performing the job, but Arnold had the satisfaction of knowing that the western division had suffered the fewest casualties while coping with the worst terrain.

Air Corps prestige suffered greatly in the air mail fiasco. In order to recoup that loss and to test the brand new B-10 bomber, a twin-engined, all-metal, low wing monoplane capable of a speed of 200 miles per hour, the Air Corps organized a round-trip flight of ten B-10s between Bolling

Field, Washington, D.C., and Alaska. Major Hugh J. Knerr supplied the logistical preparations. Arnold led the flight, which took off on July 19, 1934, and returned on August 20. On the return flight they made the first non-stop flight between Alaska and the lower forty-eight states. The trip garnered positive publicity and demonstrated the feasibility of long-range bomber operations. It also earned Arnold his second Mackay Trophy and a Distinguished Flying Cross. In spite of Arnold's pleas, some pressed up to the deputy chief of staff of the army, none of the other crew members received any award whatsoever.²⁶



Arnold in flight gear stands in front of a B-10, the type of aircraft that made the Alaska flight in 1934.

On February 11, 1935, Arnold assumed command of the newly created 1st Wing, General Headquarters Air Force (GHQ Air Force). The army established GHQ Air Force to operate and direct the Air Corps' combat aircraft, while leaving the Office of the Chief of the Air Corps to provide logistics, procurement, and personnel. Both organizations reported to the chief of staff and neither had authority over the other. The new scheme did concentrate the combat power of the Air Corps, with one wing on the east coast, one on the west coast, and one on the gulf coast, in Louisiana, but left the Air Corps internally divided in a time of extreme budgetary pressure that pitted all elements of the service against one another. In fact Arnold already commanded all the units brought into the 1st Wing, but the new position carried with it the rank of brigadier general (temporary), which he gratefully accepted.²⁷ For the next year Arnold and his men participated in realistic exercises and in the development of new tactics and doctrine fostered by GHQ Air Force. Given the fiscal and technical constraints of the time, they achieved a high state of readiness.

On December 24, 1936, Brig. Gen. Arnold became the assistant chief of the Air Corps, second only to Maj. Gen. Oscar Westover, who had just succeeded Maj. Gen. Foulois as chief of the Air Corps. Arnold probably owed his new post—which he would have preferred to turn down, because it transferred him from operational to staff duty—to the latest army chief of staff, Gen. Malin Craig. Arnold had had the good luck to know and the wisdom to cultivate several officers before they became chiefs of staff of the army. This, of course, proved most helpful to his career. At West Point Charles P. Summerall (chief of staff, 1926–1930) taught Arnold mathematics. His signature on Arnold's application helped to free Arnold from Ft. Riley and send him to Command and General Staff School. In 1911–1913 Arnold worked closely with Douglas MacArthur (chief of staff, 1931–1935). At March Field, 1931–1935, Arnold became a personal friend of Malin Craig (chief of staff, 1936–1939), whose support proved key in Arnold's appointments as assistant chief and chief of the Air Corps. Lastly, in 1914–1915 Arnold had lived next door to and worked with George C. Marshall (chief of staff, 1939–1945). During World War II Arnold and Marshall enjoyed an exemplary working relationship.

Westover and Arnold had followed starkly different career strategies to attain their positions. Westover began as a balloonist and transferred to flying. He was an adequate but not exceptionally skilled pilot. Arnold was the senior active pilot in the service and a skilled aviator. Arnold had constantly and publicly testified as to his support of Mitchell's, his own, and other's radical views on air power and had the image of an air power zealot. He had also paid the price for his views.

Westover, on the contrary, was the quintessential army man. He did not criticize the service and he sought change by working within the army and general staff system. Each man embodied a different faction within

the Air Corps. However, the two worked well together. Both fought to procure the B-17 four-engined bomber, but were unable to persuade the General Staff to order more than thirteen. They attempted, with little success, to persuade the General Staff not to concentrate on ground support aircraft. Arnold, now over fifty and perhaps realizing that he stood on the threshold of high command, moderated some of his views, at least in public. In July 1936 he testified before Congress that the Air Corps was not yet ready to become a separate air force. He further incurred the wrath of air power advocates by agreeing with Westover that GHQ Air Force should report to the chief of the Air Corps, who commanded the bulk of the air branch.²⁸ Westover often left Arnold in Washington, as acting chief of the Air Corps, while he flew inspection tours of bases and manufacturing facilities. On September 21, 1938, Westover crashed, killing himself and his mechanic.

Arnold was the favorite to succeed him. He had served as Westover's deputy, a traditional prerequisite, and had the support of the chief of staff and the approval of the secretary of war. His closest rival, Maj. Gen. Frank M. Andrews, the chief of GHQ Air Force, had angered the secretary of war, the chief of staff, and the General Staff by pushing too hard for big bombers and the theories of strategic bombardment.²⁹ However, whether power waxes or wanes, enemies accumulate. In Arnold's case a whispering campaign, of the type endemic in royal courts and national capitals, began. Arnold drank, went the story, and had often made an inebriated spectacle of himself while on duty in Hawaii. In reality, Arnold drank sparingly and had never even served in Hawaii, but the tale gained a life of its own. In any case, President Franklin Roosevelt, who had the final approval of the selection for chief of the Air Corps, delayed his decision, driving Arnold to distraction.

As Arnold played and replayed the selection in his head he could envision his post slipping away. After discussions with Spaatz and Eaker, he decided to approach one of Roosevelt's advisors in order to refute the canard. He recalled that in the previous May, Harry Hopkins, the director of the Works Progress Administration, had offered to help in the construction of air bases. Arnold may also have known that Hopkins had secretly funneled several million dollars of WPA money into obtaining machine tools for the manufacture of small arms ammunition for the army. It was well known that Hopkins not only had the president's ear but was almost his alter ego as well. Hopkins had direct access to Roosevelt and had far greater influence with the president than his official position might suggest.

Unbeknownst to Arnold, Hopkins had just returned to Washington from a two-week long inspection trip of the U.S. air industry, taken at the behest of the president. The Munich crisis in Europe threatened to break out into another world war and Roosevelt wanted someone he could trust to examine America's first line of defense—air power. The president

apparently realized that the time for initiating economic mobilization could not be put off much longer. At the same time, Hopkins noted, "the President was sure we were going to get into war and he believed air power would win it."³⁰ As events showed, Roosevelt intended to lead any American fight with a fist of air power, which cost less in terms of combat casualties and might keep the enemy at a distance. It was the importance he attached to air power rather than any stories of boozing that made the president hesitate. He needed a man who would fight for expanded air power and who knew how to mobilize industry once the appropriations began to flow. Arnold was that man. His meeting with Hopkins, which went well, cemented his selection. On September 28, 1938, the White House announced Arnold's appointment as chief of the Air Corps.



The new chief of the Air Corps shares a car ride with President Franklin Roosevelt on a chilly October day in 1938.

For the next seven years Arnold would ruthlessly use every ounce of his energy and every means at his disposal, without regard to the personal

cost to himself or others, to develop for his country the biggest and the best air force in the world.

On November 14, 1938, the day the United States recalled its ambassador from Berlin and a week after midterm elections had returned reduced but still overwhelmingly Democratic majorities in both houses of Congress, Maj. Gen. Arnold attended a special meeting with President Roosevelt at the White House. Among those attending were Harry Hopkins, Louis Johnson, the assistant secretary of war, and Gen. Craig and his deputy, Brig. Gen. George C. Marshall. The president had called the meeting in response to disturbing events in Europe. In late September the Munich crisis and the Germans' subsequent occupation of the Czech Sudetenland had confirmed the unrelenting nature of Hitler's territorial demands. A meeting on October 13 with the U.S. ambassador to France, William C. Bullitt, had heightened Roosevelt's perception of the dangerous state of European politics. And the increasingly barbaric behavior of the Nazis toward German Jews, displayed for all to see in "Crystal Night," on November 9-10, had illustrated the viciousness of the German state's internal policies. These events conclusively demonstrated to Roosevelt the rogue nature of the Nazi regime. They persuaded him that the United States needed to enlarge its aircraft production capacity to counter the mounting security threat posed by the Germans. Roosevelt intended these planes not only for the Air Corps, but for the French and British as well. He hoped that making increased U.S. manufacturing capacity available to the French and British would enable them to procure enough aircraft either to forestall an attack by Hitler or to defeat him if war came.³¹

On November 14 the president did most of the talking. He noted the weak state of U.S. defenses and pointed out that Germany had a reported air strength almost double the Anglo-French total. The president sought an Air Corps of 20,000 planes, backed by a productive capacity of 2,000 planes per month. He knew that such a program would not pass Congress. Therefore, he asked the War Department to develop a plan for building 10,000 aircraft and for constructing new plant capacity for an additional 10,000 aircraft per year. Although this meeting concentrated on airplanes, it supplied the spark for all subsequent army and Air Corps prewar matériel and manpower expansion as the War Department sought not only new planes but funds to provide a balanced, combat-ready army.³²

In December 1938 the Air Corps produced a plan calling for 5,500 aircraft and boosting annual pilot training from 300 to 4,500 pilots. It served as the blueprint for expansion of a force with only 1,600 aircraft on hand. Plants working on aircraft contracts for the Air Corps had a productive capacity of only 88 planes per month.³³ Even six months later, in June 1939, when the Air Corps adopted a planning goal of 24 combat-ready groups, it still had only 13 operational B-17s and 22,287 personnel, only twice the strength of the cavalry.³⁴ On May 16, 1940, the Air Corps increased its expansion plans to 7,000 pilots per year and 41 groups. By

August 8, 1940, new goals called for 12,000 pilots and 54 combat-ready groups, including 21,470 planes and 119,000 personnel. By December 17, 1940, a new program called for 30,000 pilots a year.³⁵

As the Air Corps ballooned, it underwent reorganization. In October 1940, Marshall began a new study of Air Corps needs, which resulted in the unsuccessful reorganization of November 19, 1940,³⁶ under which Arnold became acting deputy chief of staff for air, but with the GHQ Air Force removed from his authority. This scheme once again separated the combat function of the Air Corps from its supply and training function. It could not long survive. On June 20, 1941, the War Department issued a revision of Army Regulation 95-5, which governed the status, function, and organization of the air arm. It created the Army Air Forces (AAF), headed by a chief, who also became the deputy chief of staff for air and had the authority to supervise and coordinate the work of the Office of the Chief of the Air Corps, the GHQ Air Force—redesignated Air Force Combat Command—and all other air elements. The regulation further created an Air Staff to assist the new deputy chief, freeing the air arm from the ground officers who controlled the General Staff. This organization sufficed until March 9, 1942, when a final rearrangement of positions gave the Army Air Forces equality with the army ground forces and army service forces.³⁷

Strategic planning kept pace with expansion and reorganization. On January 29, 1941, committees from the U.S. and British armed forces met “to determine the best means whereby the United States and the British Commonwealth might defeat Germany and her allies.” In the final report, American-British Staff Conversations No. 1 (ABC-1), submitted on March 27, 1941, both parties agreed to the principle of defeating Germany first and, if necessary, Japan second. ABC-1 also provided for unity of command within each theater, integrity of national forces, and for “U.S. Army air bombardment units [to] operate offensively in collaboration with the Royal Air Force, primarily against German Military Power at its source.”³⁸

On July 9, 1941, President Roosevelt instructed the army and navy to prepare estimates of the “production requirements required to defeat our potential enemies.”³⁹ When the president’s request went to the General Staff, it asked the Air Staff for assistance. Instead, Arnold suggested that the Air Staff itself draw up air requirements. The overworked General Staff agreed.⁴⁰ Within a week the Air Staff had prepared its plan. Because of its clear definition of the AAF’s strategic aims and its call for a gigantic air arm to accomplish those aims, the “Munitions Requirements of the AAF for the Defeat of Our Potential Enemies” (AWPD/1) proved a key document in the AAF’s preparation for the war. It defined three AAF tasks in order of importance: (1) “to wage a sustained air offensive against Germany”; (2) to conduct defensive operations in the Orient; and (3) to provide for the defense of the Western Hemisphere. To accomplish its

missions, AWPDP/1 specified a force of 2,164,916 men and 63,467 aircraft. Along with the army and navy requirements, it formed the beginning of the Victory Program on which the government based its initial industrial mobilization.⁴¹

In 1941 Arnold made two important trips overseas. In April he traveled to Great Britain, where he met the British service chiefs, Lord Beaverbrook, chief of British aircraft production, and Prime Minister Winston Churchill. While in Britain Arnold attempted to coordinate aircraft allocations, ferry routes, and the training of British aircrews in the U.S. He did not solve every difficulty, but he did establish useful working relationships, especially with his eventual opposite number, Air Chief Marshal Sir Charles Portal, chief of the Royal Air Force staff. He returned from the trip convinced that the British were hard pressed and that their appeals for assistance were genuine. He passed on those observations to Roosevelt and other senior American leaders. As for himself, Arnold judged that he had made his first journey from a bit player to an actor in the limelight.⁴² Then, in the first week of August, he attended the first Roosevelt-Churchill summit meeting. At the Placentia Bay Conference, held on British and American naval vessels off the coast of Newfoundland, the two leaders had their initial face-to-face meeting and discussed future strategy. They brought their military chiefs of service to assist the heads of government and to meet with one another over details. Because the British had separate ground, naval, and air services, Harry Hopkins, who had just completed a troubleshooting mission to Britain, recommended to the president that the U.S. military delegation also have a separate air representative. In addition, many of the then current issues between the two countries' militaries revolved around air matters. Arnold became the U.S. air representative. At Placentia Bay he was limited to discussing air matters, but thereafter, as the Combined British-American Chiefs of Staff (CCS) met several times a year, Arnold became a full member of the CCS, and, just as importantly, a full member of the U.S. Joint Chiefs of Staff.

By December 6, 1941, Arnold had spent more than three years justifying appropriations, setting up civilian flight training and mechanics schools, coordinating an ever-growing and ever more complex production schedule (which had to reflect advances in technology and lessons learned from combat), integrating matériel and personnel into effective units, and obtaining aircraft to fill his own units while supplying the French and British with some of his newest and most advanced aircraft. The advent of war did not change the nature of his tasks; rather, it magnified their scale and added the pressure and responsibility of life and death decision making. By December 1941 the AAF possessed 32-1/2 combat groups in various stages of formation; approximately 9,000 aircraft, including 3,000 combat aircraft, only 1,100 of which met modern standards; 159 four-engined aircraft; and 292,000 personnel.⁴³



A month before Pearl Harbor, Maj. Gen. Arnold sits at his desk in the War Department, Munitions Building, surrounded by telephones and a model of a Martin Marauder.

The first wartime meeting of the CCS, in Washington in late December 1941 and early January 1942, solidified Arnold's status as a full member. More importantly, the Anglo-Americans confirmed their decision to treat Germany as the principal foe and to mount a strategic air attack against the Reich from Britain. The president, the prime minister, and their chiefs also addressed an issue that would bedevil them for much of the war—shipping. The allocation of shipping tonnage between industrial requirements, support of the civil population, and the military theaters of operation was the overriding logistical consideration of the allies. Four-engine bombers might fly from continent to continent, provided ships supplied stops en route, but all other items needed ships to get them from the country of origin to supply heads in the battle zones. New shipping production eventually outpaced losses, but for much of the conflict increased operations in one area came at the expense of other areas. For example, in July 1942 Arnold opposed the Anglo-American decision to invade French North Africa, in part because it diverted shipping and combat units from the build-up of the American strategic bombing effort in Great Britain.⁴⁴

Arnold's position as commanding general of the AAF and member of the JCS and CCS naturally placed him at the center of events and forced him to juggle a complex and interrelated assortment of issues. For the first

eight months of American participation in the war, the AAF had little to show for its efforts but a series of embarrassing defeats in the Far East and almost no action in operations in Europe. At Pearl Harbor the Japanese caught the AAF lined up wing-tip to wing-tip and destroyed it before it could fulfill its function of fleet defense. A few hours later, at Clark Field in the Philippines, the Japanese caught the AAF forces under MacArthur on the ground, destroyed them, and gained control of the air. Arnold complained that he never got the full story on the debacle in the Philippines and noted, "It is true that we were outnumbered, but I had always believed that our airmen would fight it out in the air; they should never have been caught flat footed [sic] on the ground."⁴⁵ Nor did the AAF contribute substantially to the defense of the Dutch East Indies. However, neither the U.S. Navy nor Army could point to any better results, although their forces fought gallantly.

In the initial stage of the war all the service chiefs dealt from weakness—Lt. Gen. Arnold most of all. Army Chief of Staff Gen. Marshall, Chief of Naval Operations Adm. Ernest J. King, and Chief of Staff to the President Adm. William D. Leahy all outranked Arnold and all needed Arnold's aircraft to support their increasingly far-flung operations, as did Gen. MacArthur in his semiautonomous fiefdom in the South West Pacific Area. Arnold attempted to keep the AAF effort focused on the twin objectives of Germany first and an AAF heavy bomber offensive from England into Germany. On August 15, 1942, two days before the first U.S. heavy bomber raid over occupied Europe, he held the "most active military press conference held in Washington since the war began"⁴⁶ to defend the AAF in Europe. He bombarded the first commander of the U.S. Eighth Air Force in Great Britain, Maj. Gen. Carl Spaatz, with requests for public relations materials and applauded Spaatz's suggestion to use bomb damage photos. "People believe more readily what they see than what they hear," Arnold argued, adding that "every paper in the United States will feature the pictures if you can get them to us."⁴⁷ The AAF commander also observed that "within the borders of [the] continental United States two most important fronts exist, namely, aircraft production and public opinion. Nine months have passed since Pearl Harbor and the American public now wants to see pictures, stories and experiences of our Air Forces in combat zones. The public is entitled to expect us to furnish ... them."⁴⁸ This public relations campaign continued in spite of the objections of Gen. Marshall, who did not want one part of the army highlighted at the expense of another.⁴⁹

From January 14 through 24, 1943, Churchill, Roosevelt, and the CCS met at Casablanca, in French Morocco. They decided to postpone the cross-Channel invasion from England into northern France for a year and to continue ground operations against the Axis powers in the Mediterranean Sea. Churchill arrived at the conference saying he had "become increasingly doubtful of the daylight bombing of Germany by

the American method from Great Britain.” Churchill feared that a collapse of the American bombing effort would lower morale and profoundly disrupt air production schedules, if the Americans had to switch bomber types.⁵⁰ Well might the prime minister have had his doubts—thirteen months after Pearl Harbor, the AAF had not yet dropped a single bomb on Germany. Arnold responded by orchestrating a campaign to assuage Churchill’s doubts. He brought Generals Andrews, Spaatz, and Eaker to Casablanca and supplemented their briefings to Churchill with his own lobbying effort. This labor gained Churchill’s permission to continue daylight bombing and resulted in the CCS issuing CCS 166/1/D “The Bomber Offensive from the United Kingdom,” which authorized the Anglo-American Combined Bomber Offensive and put in motion the around-the-clock bombing of Germany.⁵¹



The U.S. president and his military and civilian advisers at the Casablanca conference. Behind the president stand Harry Hopkins, Lt. Gen. Arnold, Lt. Gen. Brehon B. Somervell, and Averell Harriman; to his right sits Gen. George Marshall and to his left Adm. Ernest King.

A serious heart attack prevented Arnold from attending the Washington Conference, May 12–25, 1943. That conference approved

Operation POINTBLANK, the Eighth Air Force's plan for the strategic bombing of Germany, starting with the elimination of the German fighter forces. But his heart attack did not prevent his return to a strenuous work pace. In August 1943 he attended the Anglo-American conference at Quebec, which placed the cross-Channel invasion under American command. At the conference Adm. Lord Louis Mountbatten, chief of British Special Operations, briefed attendees on an idea for using icebergs in the North Atlantic for airfields for anti-submarine aircraft. During the presentation he demonstrated the toughness of the ice by emptying his pistol at it, and then asked his aides to wheel the dripping cloth-covered cart from the room. As the aides left, the assembled Combined Chiefs were startled to hear one of the officers in the anteroom exclaim, "My God, they've been arguing all day and now they've gone and shot someone. I wonder who it is?"⁵² At the same conference Arnold met British Brigadier Orde Wingate, who advocated large-scale commando operations behind Japanese lines in Burma. Once again demonstrating his receptiveness to new ideas, Arnold instantly agreed to set up the 1st Air Commando Group, composed of transports, bombers, and fighters, to assist Wingate-style operations in South East Asia.



Gen. Arnold and the other members of the U.S. Combined Chiefs of Staff at the August 1943 conference at Quebec. Gen. Marshall sits to Arnold's right; to his left are Brig. Gen. J. R. Deane, secretary, and Admirals Ernest King and William Leahy.

Arnold's openness to innovation sometimes extended well beyond the ordinary. For example, he also espoused the so-called "bats in the belfry" project, which proposed to attach tiny incendiary bombs, with time fuzes, to bats and then to drop the bats over Japanese cities. The flying mammals would descend to the ground and roost in the eaves of houses. The bombs would then immolate their carriers and cause fires throughout the target

area. Fortunately for animal lovers, the program ran into severe technical problems—the bats would not leave the bomb bays and those few that did could not survive the aircraft's slipstream.



Arnold confers with Adm. Lord Louis Mountbatten at the Quebec conference.

During the first two-and-one-half years of the war Arnold continued to fight against attempts to divert aircraft and units from the strategic assault on Germany. His efforts were hampered by the Eighth Air Force's relative lack of success. Lack of shipping limited the supplies and replacements of the Eighth as did the premature commitment of hastily trained units. But above all, two faults, both directly attributable to shortsightedness on the part of the Air Corps hierarchy, hamstrung the American heavy bombing effort—lack of long-range escort fighters to protect the bombers to and from the target and the lack of a means or method of bombing accurately through overcast. Arnold, like his AAF contemporaries, had foreseen neither of these problems, but when they became obvious he worked to solve them rather than refusing to admit their existence. He asked the British to revise their allocations of the long-range Mustang fighter, encouraged American manufacturers to increase the range of other fighters, and put programs for jettisonable fuel tanks at top priority.⁵³ By early 1944 the Eighth and Ninth Air Forces in England had

sufficient escort fighters to protect the bombers deep into Germany. By mid-1944 the AAF had driven the Germans from the sky. As for bombing through clouds, the AAF borrowed the H2X aiming radar from the British and Arnold helped to establish a radar laboratory to copy and manufacture it. The bombing radar also came on line in early 1944.

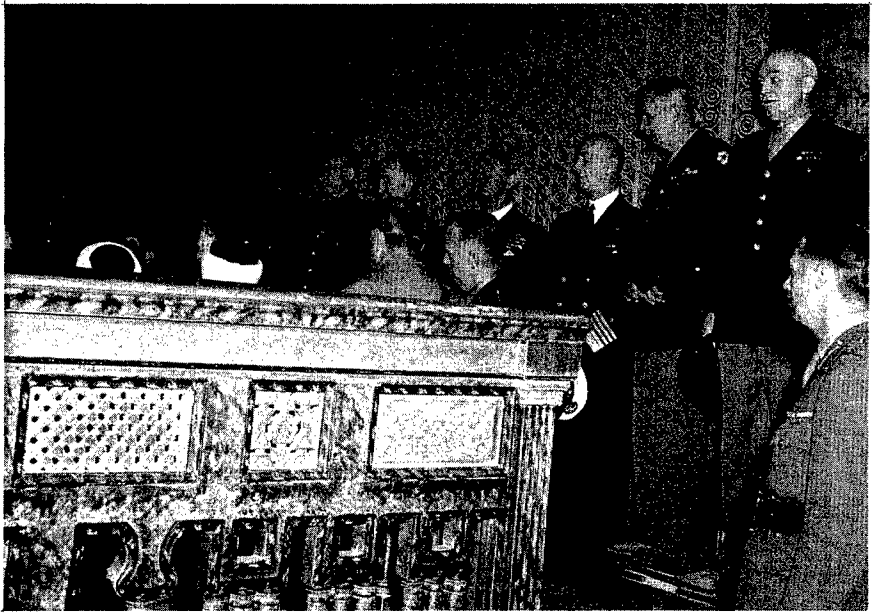


Arnold and Under Secretary of War Robert Patterson pose for photos with members of the crew of the "Memphis Belle" in front of a B-17 in the summer of 1943.

In the meantime, as these solutions worked through the system, Arnold had to defend AAF activities—or lack of them—and justify the enormous national commitment made to air power. In late 1942 he took the *Air Forces News Letter*, combined it with an already existing publication and produced a revamped glossy monthly news magazine for AAF personnel, *Air Force Magazine*. It had the look and feel of *Time* or *Life* and its wide distribution ensured that members of the AAF would learn of its global activities and possibly pass the magazine or the information along to the public. Arnold needed proof of accurate bombing. In April 1943 he told Spaatz that "many people in high places" were asking hard questions about the exact details of damage inflicted by the AAF.⁵⁴ That same month, at Arnold's behest, the AAF began printing *Impact*, also a *Life* look-alike, that detailed specific operations and contained technical graphs and charts on tactics.⁵⁵ The bylines of top photojournalists, such as

Margaret Bourke-White, enhanced its pages. To further spruce up *Impact*, Arnold instructed all his overseas air force commanders to send to him, on a regular basis, special folders containing photos of outstanding actions. *Impact* also had a sophisticated twist. The AAF issued it in a security-classified format, albeit at the lowest possible classification. This meant that the magazine, which contained spectacular photographs not available to the general public, had a certain cachet; one had to be "in the know" or even important to see it. Needless to say, it circulated throughout the Pentagon, Washington, London, Delhi, and Kunming, and vividly demonstrated the effectiveness of air power.

At the end of November 1943 Arnold attended one of the most important in the series of CCS conferences. The Anglo-Americans met first with the Chinese in Cairo, Egypt; then with the Russians in Tehran, Iran, where they promised Stalin they would begin a second front by the summer of 1944; and, finally, only with themselves, again in Cairo, where Roosevelt selected Gen. Dwight D. Eisenhower to command the cross-



After leaving Tehran on December 1, 1943, the British and American Chiefs of Staff, wearing felt slippers over their shoes, visit the interior of the Dome of the Rock during their visit to Jerusalem. Those who are standing include, left to right, Air Chief Marshal Sir Charles Portal, Gen. Sir Alan Brooke, Field Marshal Sir John Dill, unidentified, Adm. Sir Andrew Browne Cunningham, Adm. Ernest J. King, Gen. Brehon B. Somervell, and Gen. Arnold, with Gen. Sir L. C. "Joe" Hollis in the immediate foreground; seated are Gen. George Marshall and, to his left, Gen. Sir Hastings "Pug" Ismay.

Channel invasion. Arnold came to these meetings with his own agenda but with a weak hand to play because of the Eighth's inability to penetrate deeply into Germany without excessive losses. Arnold wished to establish an Allied strategic bomber command, in London, under an American officer, combining British Bomber Command, the U.S. Eighth Air Force, and the U.S. Fifteenth Air Force in Italy. The RAF would have none of it. This forced Arnold to occupy his fallback position—an all-American command, in London, the United States Strategic Air Forces in Europe (USSTAF), embracing just the Eighth and Fifteenth. Although dubious, the British agreed.



Deep in conversation, Portal and Arnold walk with other Anglo-American chiefs of staff during their visit to Jerusalem.

In one of the most controversial air personnel decisions of the conflict, Arnold chose Lt. Gen. Spaatz to command USSTAF and sent the Eighth's commander, Lt. Gen. Eaker, to replace Spaatz in the Mediterranean.⁵⁶ The move soured a twenty-year friendship with Eaker, but Arnold had the men he wanted in the positions he intended for them. Later in the war Arnold made a similar move in the Twentieth Air Force in the Pacific when he replaced Maj. Gen. Haywood Hansell with Maj. Gen. Curtis E. LeMay. Arnold could be unforgiving when he wanted results.

In the fall of 1944 Arnold took steps to ensure the future of his service. He recruited a distinguished civilian aeronautical scientist, Hungarian-born Dr. Theodore von Kármán, to head a committee of scientists. Arnold instructed the committee to advise the AAF on long-range

science, to study jet propulsion, atomic energy, and electronics in particular, and to report back to him. This effort resulted in the *Toward New Horizons* report issued at the end of 1945. The multi-volume study made numerous recommendations, including the permanent establishment of a scientific advisory board for the USAF and the creation of a major air force research and development command, both of which were later instituted.⁵⁷



Arnold and Marshall attend a meeting of the Combined Chiefs of Staff at Château Frontenac during the September 1944 Quebec conference.

By the end of 1944 the AAF operated 41,600 aircraft in the continental U.S. and 31,000 overseas, with 1,100,000 officers and men overseas and a total strength of 2,359,000. American arms production and recruitment far exceeded anticipated losses and equipment loans to allies. Accordingly, in the fall of 1944, Arnold and Assistant Secretary of War for Air Robert A. Lovett began to scale back contracts and training programs. Pilot training fell from an annual rate of 105,000 to 60,000 and later, in February 1945, to 30,000. To their chagrin and the horror of their families, many of these excess would-be pilots became infantry replacements. Also by February 1945 the AAF had canceled \$7 billion in aircraft production contracts.⁵⁸

In mid-December 1944 a massive heart attack almost killed Arnold. He underwent an extensive convalescence lasting until March 1945. His doctors forbade him to participate in day-to-day decision making and shielded him from most major decisions. Consequently, Arnold did not

participate in the Anglo-American conference at Malta at the end of January or the tripartite conference at Yalta in February. He did attend the Anglo-American-Soviet conference at Potsdam in mid-July 1945.

At Potsdam, on July 16, Arnold, Secretary of War Henry L. Stimson, and Gen. Marshall learned of the successful U.S. test of the atomic bomb and discussed its use. A joint AAF-Manhattan Project committee had already selected four targets. Secretary Stimson, however, had raised continuous objections to the bombing of one selected target, Kyoto, and went to President Truman on July 21, 1945. The president agreed to substitute Nagasaki for Kyoto. On July 25 the JCS directed Gen. Spaatz, now commanding the United States Army Strategic Air Forces in the Pacific, to consider Niigata, Hiroshima, Nagasaki, and Kokura arsenal as targets.⁵⁹ The atomic bombs dropped on Hiroshima and Nagasaki and the overwhelming Soviet attack on Manchuria, coupled with the already dismal strategic situation, shocked the Japanese government into surrender. Arnold's participation in the decision to use the bomb was his last significant military act.



Arnold sits with his staff in the grounds of the Potsdam conference near Berlin, July 1945.

He left active duty, after yet another heart attack, in November 1945. Poor health prevented him from taking an aggressive role in postwar military debates leading to Air Force independence, and he died after his sixth heart attack in January 1950. Ironically, the only time he ever wore

USAF blue was in his coffin. For almost forty years Henry H. Arnold sought to advance the cause of American military "air power."



The marshal of the RAF and the commanding general of the AAF fish along a tree-lined lake in the Potsdam conference area.

When he arrived at the gates to heaven and was offered angel's wings he undoubtedly, like many an aviator before him, said, "No thanks, I think I'll just keep the ones I've already earned."

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NOTES

1. Excerpt of Oral Interview: Murray Green with Brig. Gen. Trubee Davison, Apr. 17, 1970, Locust Valley, N.Y., cited in Murray Green Index File No. 6.21, Murray Green—Hap Arnold Collection, U.S. Air Force Academy, Archives Division, Colorado Springs, Colo., Microfilm reel 43803, Air Force Historical Research Agency (AFHRA), Maxwell AFB, Ala.
2. Thomas M. Coffey, *Hap: The Story of the U.S. Air Force and the Man Who Built It, General Henry H. "Hap" Arnold* (New York, N.Y.: The Viking Press, 1982), pp. 19, 25, 26.
3. H. H. Arnold, *Global Mission* (Blue Ridge Summit, Penn.: Tab Books Inc., 1989), pp. 1–12. This reprints the original edition by Harper and Row, Inc., published in 1949.
4. Coffey, *Hap*, p. 34.
5. Coffey, *Hap*, p. 40, citing Ltr 2d Lt. Arnold to the Adjutant General, U.S. Army, Apr. 7, 1911.
6. Arnold, *Global Mission*, p. 15.
7. Arnold, "Global Mission," MS, chap. 4, p. 1–3. Murray Green Collection, USAF Academy.
8. Department of the Air Force, General Orders No. 7, Jan. 17, 1950: Announcement of the Death of General of the Air Force Henry H. Arnold; Dept. of the AF, Public Information Division, Biography: General Henry Harley Arnold, May 13, 1949.
9. Arnold, *Global Mission*, p. 41.
10. Rpt, 2d Lt. H. H. Arnold (Ft. Riley, Kans.) to CO, Signal Corps Aviation School (Washington, D.C.), Subject: Report Upon Test of Aeroplane in Connection with Artillery Fire, Nov. 6, 1912; and Ltr, 2d Lt. H. H. Arnold (Ft. Riley) to Capt. Charles De F. Chandler (War Department, Washington, D.C.), Nov. 7, 1912, Box 2; Folder: Misc. Corres., 1912–1915, Arnold Papers, Manuscript Division, Library of Congress (LC), Washington, D.C.
11. Coffey, *Hap*, p. 72. In *Global Mission* Arnold implies that he quit flying and service in the Aviation Section because of his marriage in Sept. 1913. Married men did not fly. Arnold's official obituary states that he left the Aviation Section because his two-year detail from the infantry had expired. According to Coffey, instead of requesting an extension of the detail, Arnold specifically requested infantry duty in the Philippines.
12. During World War II Marshall became the chief of staff of the U.S. Army, while Arnold became the commanding general of the U.S. Army Air Forces. Arnold, "Global Mission," MS, chap. 5, p. 5.
13. Coffey, *Hap*, p. 87.
14. Arnold, "Global Mission," MS, chap. 7, p. 3.
15. *Ibid.*, p. 12.
16. To appreciate the impact of the aviation bill, one must consider that U.S. participation in World War I was decades closer in time to the American Civil War than to the Persian Gulf War. The Federal government estimated its outlays for the Civil War, excluding pensions and interest, at \$6,190,000,000. (See Patricia Faust, ed., *Historical Times Illustrated Encyclopedia of the Civil War* (New York, N.Y.: Harper & Row, 1986), p. 187.) Thus, to at least some personnel in the War Department, this aviation bill alone cost more than a tenth of the expense of the U.S.'s most searing and bloody war. In fact, the legislation more than tripled the entire War Department's annual expenditures for any single year since 1899. (See U.S. Bureau of the Census, *Historical Statistics of the United States Colonial Times to 1957* (Washington, D.C.: Government Printing Office, 1960), Table: Series Y 350-356, Expenditures of the Federal Government, 1789-1957, p. 718.) What is more, the bill surpassed the total War Department expenditures on aviation from 1907 to 1915 (\$400,000) by

more than 150,000 percent. Finally, it was the largest appropriation Congress had made up to that time for one specific purpose.

17. Martha E. Laymen and Chase C. Mooney, "Organization of Military Aeronautics" (Dec. 1944), USAF Historical Study No. 25, p. 32. See also Executive Order No. 2862, May 20, 1918.

18. Arnold, "Global Mission," MS, chap. 12 (Mar. 9, 1948), p. 18.

19. *Ibid.*, chap. 15, p. 8.

20. *Ibid.*, chap. 17, p. 12.

21. Robert Frank Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force, 1907-1960* (Maxwell AFB, Ala.: Air University Press, 1989), pp. 46-51.

22. Ltr, Maj. Gen. Mason M. Patrick, Chief of the Air Service, to Maj. H. H. Arnold, Office of the Chief of the Air Service (OCAS), Subj: Reprimand, Mar. 2, 1926, Box 2; Folder: Misc. Corres., 1926, Arnold Papers, LC.

23. The books, while interesting because of their authorship, have little intrinsic merit. However, in 1944, Arnold signed a contract with Warner Brothers Studios for the rights for a volume concerning Bruce's combat experiences in World War I. The project proved abortive, but supplies an unusual might-have-been for both military and screen historians. Ltr, H. H. Arnold (Fairfield, Ohio) to Mr. George T. Bye (New York, N.Y.), July 29, 1929, Box 2; Folder: Misc. Corres., 1929, Arnold Papers, LC.

24. Coffey, *Hap*, pp. 148-50.

25. The Roosevelt administration and Congress established the CCC to alleviate the hardship inflicted by one facet of the Great Depression, lack of jobs for young men. The CCC gave 250,000 young men work building roads, fire-fighting, and in flood control, reforestation, and similar public works programs. Initially the CCC worked under the supervision of military officers, including out-of-work reservists, who supplied direction, logistical support, and organization, but not military discipline. Nonetheless, fears of political regimentation resulted in the eventual transfer of CCC supervision from the military to the Works Progress Administration (WPA) in 1935.

26. *Ibid.*, p. 160, and Dewitt Copp, *A Few Great Captains: The Men and Events that Shaped the Development of U.S. Air Power* (Garden City, N.Y.: Doubleday and Co., 1980, and The Air Force Historical Foundation), pp. 254-55.

27. All army promotions through the rank of colonel were predetermined by an officer's position on the army's promotion list. This list, comprised of some 12,000 regular officers, worked strictly by seniority. In theory an officer entered from West Point as the junior second lieutenant on the list and, if he lived long enough, would work his way through to become the senior colonel. Mandatory retirement was at age sixty-four and promotion to general officer was by selection. However, as not only the newest portion of the army, but as a branch requiring young and extremely fit personnel, the Air Service/Corps, with approximately 1,100 commissioned personnel (all but a handful rated pilots), found most of its officers clustered in the lower rungs of the promotion list. By seniority its officers were not eligible for high command assignments in their own branch, and officers outside the branch lacked the experience necessary to conduct air operations competently. The Air Corps Act of 1926 dealt with this situation in two ways. First, it allowed for the temporary promotion of senior Air Corps officers by two ranks (that is, lieutenant colonel to brigadier general). Second, it attached a commensurate general officer's rank to each senior position in the air branch. The rank stayed with the position rather than with the individual who temporarily occupied the desk. The chief of the Air Corps and the commander of GHQ Air Force occupied major general billets. Their principal assistants, such as wing commanders or assistant chiefs of the Air Corps, received brigadier general billets. Hence, an Air Corps officer who

was only a colonel or lieutenant colonel on the promotion list would become a major or brigadier general (temp.) as long as he occupied the designated command position. If he left the position he would revert to his permanent/promotion list rank. The temporary appointments lasted for only a fixed term (three years for the major generals) and had to be selected or renewed with the approval of the chief of staff. These expedients allowed the senior officers of the Air Corps, at best junior colonels, to gain experience at higher levels of authority and command.

28. For a detailed description of this period see Arnold, "Global Mission," MS, chap. 24, pp. 1-23.

29. See Murray Green, "Marshall's Airman," in John L. Frisbee (ed.), *Makers of the United States Air Force* (Washington, D.C.: Office of Air Force History, 1987), p. 59. Green tells the highly unlikely story that on Sept. 22, 1938, Gen. Craig, in the presence of all the assistant chiefs of staff, offered Andrews the post of chief of the Air Corps if Andrews would stop pushing the B-17. According to Green, Andrews declined.

30. Copp, *Great Captains*, p. 445.

31. Mark S. Watson, *U.S. Army in World War II*, subseries: *The War Department: Chief of Staff; Pre-War Plans and Preparations* (Washington, D.C.: Office of the Chief of Military History (OCMH), GPO, 1950), pp. 132-36.

32. *Ibid.*, pp. 136-43.

33. *Ibid.*, p. 127.

34. *Ibid.*, p. 279.

35. Wesley Frank Craven and James Lea Cate (eds.), *The Army Air Forces in World War II*, Vol. I: *Plans & Early Operations: January 1939 to August 1942* (Chicago, Ill.: University of Chicago Press, 1948), pp. 104-16. See also Watson, *Pre-War Plans*, pp. 278-79.

36. Watson, *Pre-War Plans*, p. 289.

37. *Ibid.*, pp. 289-93.

38. Craven and Cate, *Plans & Early Operations*, pp. 136-38.

39. See the complete text of the president's letter given in Joint Board Document No. 355 (Serial 707), subj: "Joint Board Estimate of United States Overall Production Requirements," pp. 1-2, file no. 145.81-23, AFHRA.

40. Memo for the Chief of the Air Staff, subj: Notes on Preparation of AWPDP/1, Nov. 19, 1941, Spaatz Papers, Diary, Manuscript Div., LC.

41. Copy of AWPDP/1, Spaatz Papers, Subject File 1929-1945.

42. See Arnold, "Global Mission," MS, chap. 17, for a detailed description of this trip.

43. *Ibid.*, chap. 30, p. 13.

44. See *ibid.*, chap. 33, p. 14, for a more complete statement on Arnold's objection's to air allocations in July 1942.

45. Arnold, *Global Mission*, pp. 272-73.

46. "Air Battle Feats Praised by Arnold," *New York Times*, Aug. 16 1942, pp. 1, 37.

47. Ltr, Arnold to Spaatz, Sept. 2, 1942, Spaatz Papers, Diary.

48. Ltr, Arnold to Spaatz, Sept. 15, 1942, Spaatz Papers, Diary.

49. Alfred D. Chandler, *The Papers of Dwight Eisenhower, The War Years* (Baltimore, Md.: Johns Hopkins Press, 1970), vol. 1, item 440, Msg 1324 Eisenhower to Marshall, Aug. 20, 1942, pp. 482-83.

50. W.P. (42) 580 note by the prime minister and minister of defence, subj: Air Policy, Dec. 16, 1942, PREM 3/452/1, Public Records Office, Kew, Great Britain.

51. For a more detailed discussion of the air issues at the Casablanca Conference, see Richard G. Davis, *Carl A. Spaatz and the Air War in Europe* (Washington, D.C.: Center for Air Force History, 1993), pp. 155-65.

52. Arnold, "Global Mission," MS, chap. 38, p. 15.
53. For a complete description of the AAF's efforts to solve the long-range escort problem, see Bernard Boylan, *Development of the Long-Range Escort Fighter* (USAF Historical Program 1955), USAF Historical Study No. 139.
54. Ltr, Arnold to Spaatz, Apr. 10, 1943, Spaatz Papers, Diary.
55. Arnold, "Global Mission," MS, chap. 32, pp. 5-6.
56. See Davis, *Spaatz*, pp. 273-79, for one version of this switch.
57. For an comprehensive description of the Arnold-von Kármán relationship and the preparation of *Toward New Horizons*, see Michael H. Gorn, *Harnessing the Genie: Science and Technology Forecasting for the Air Force, 1944-1986* (Washington, D.C.: Office of Air Force History, 1988), pp. 11-51.
58. Arnold, "Global Mission," MS, chap. 42, pp. 2-3.
59. Vincent C. Jones, *United States Army in World War II*, subseries: *Special Studies, Manhattan: The Army and the Atomic Bomb* (Washington, D.C.: Center of Military History, 1985) pp. 528-30.